

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

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| Applicant's or agent's file reference KENT-B-PCT | FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below. | |
| International application No. PCT/US2004/015411 | International filing date (day/month/year) 17/05/2004 | (Earliest) Priority Date (day/month/year) 19/05/2003 |
| Applicant KENT STATE UNIVERSITY | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

METHOD OF PLASMA BEAM BOMBARDMENT OF ALIGNING FILMS FOR LIQUID CRYSTALS

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/015411

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 G02F1/1337

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|---|
| X | PATENT ABSTRACTS OF JAPAN vol. 1995, no. 06, 31 July 1995 (1995-07-31) -& JP 07 056172 A (SEIKO EPSON CORP), 3 March 1995 (1995-03-03) | 1,20 |
| Y | abstract | 2-7, 9-19, 21-29, 31-50 |
| A | --- PATENT ABSTRACTS OF JAPAN vol. 1998, no. 02, 30 January 1998 (1998-01-30) -& JP 09 281499 A (SUMITOMO BAKELITE CO LTD), 31 October 1997 (1997-10-31) abstract --- -/-- | 1,4,6,7, 9,10,23, 24,26, 28,29, 31,32 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

16 September 2004

Date of mailing of the international search report

11/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Ammerlahn, D

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/015411

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|----------------------------------|
| A | PATENT ABSTRACTS OF JAPAN vol. 1998, no. 01, 30 January 1998 (1998-01-30) -& JP 09 230351 A (NISSIN ELECTRIC CO LTD), 5 September 1997 (1997-09-05) abstract --- | 1,23,45 |
| Y | US 5 973 447 A (DANIELS BRIAN KENNETH ET AL) 26 October 1999 (1999-10-26) column 1, line 1 -column 9, line 32 --- | 2-7, 9-19, 21-29, 31-50 |
| Y | US 6 195 146 B1 (CHAUDHARI PRAVEEN ET AL) 27 February 2001 (2001-02-27) abstract column 3, line 45 -column 4, line 52 --- | 3,25,46 |
| Y | US 2002/186336 A1 (CHAUDHARI PRAVEEN ET AL) 12 December 2002 (2002-12-12) the whole document ----- | 45-50 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/015411

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|---|--|
| JP 07056172 | A | 03-03-1995 | NONE | |
| JP 09281499 | A | 31-10-1997 | NONE | |
| JP 09230351 | A | 05-09-1997 | NONE | |
| US 5973447 | A | 26-10-1999 | JP 2001511580 T WO 9905417 A1 US 6086962 A US 6504294 B1 | 14-08-2001 04-02-1999 11-07-2000 07-01-2003 |
| US 6195146 | B1 | 27-02-2001 | US 5770826 A CN 1198463 A , B EP 0806699 A2 HK 1015400 A1 JP 10096927 A KR 246161 B1 SG 55290 A1 TW 439006 B | 23-06-1998 11-11-1998 12-11-1997 10-10-2003 14-04-1998 15-03-2000 21-12-1998 07-06-2001 |
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